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1925-26

IRVING
FURNACE
COMPANY

Union
N.Y.

CATALOGUE
AND
PRICE LIST
1925

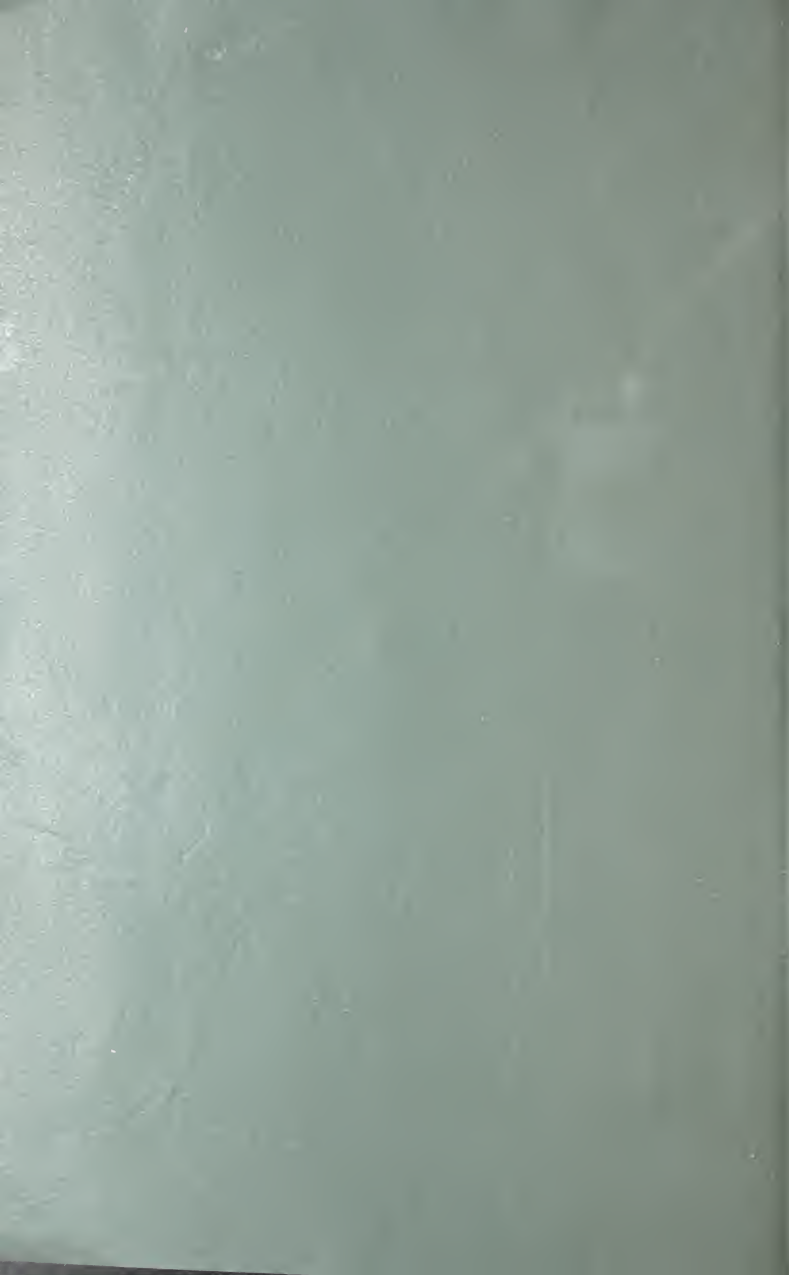
WARM AIR FURNACES
AND
HOT WATER HEATERS

NEW YORK OFFICE

Irving F. Furnace Company

100 West Broadway Street

Brooklyn, N.Y.



IMPORTANT.

IF YOU wish for information as to the size of Furnace required for heating a certain building, please answer the following questions in order to determine the size and kind of Furnace best adapted to do the work in the most economical and efficient manner.

Is the building an old or a new one?

Style of building—wood, brick or stone?

Is building standing alone or in a block?

Size of building?

How many stories to be heated?

Height of each story

Height of cellar?

Designate rooms to be heated. " Size of rooms and hall " Location of Chimney and flues " POINTS OF COMPASS	}	Designate these by a sketch of house. (Ground Plan of each story)
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FOR A CHURCH, PUBLIC BUILDING OR SCHOOL.

Is the building an old or a new one?

Style of building—brick, wood or stone?

Size Height

Is the ceiling plastered or finished in wood and covered with felt?

Give description of ventilators and where located

Cellar—give height

Designate Entrance—with lobby, if any. " Aisles. " POINTS OF COMPASS. " Chimney Flues " Rooms to be heated " Size of rooms to be heated. If basement is to be heated, designate size, height.	}	Designate these by a sketch.
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Kind of Furnace wanted, Brick or Portable

Fuel to be used—hard or soft coal or wood, or natural gas

To the Trade.

. . .

THIS Catalogue represents a complete line of warm air furnaces and combination warm air and hot water heaters, constructed from either all CAST IRON, or in part STEEL PLATE, adapted to either anthracite or bituminous coal.

We claim for our heaters GREATER DURABILITY, superior advantages of construction in points of SIMPLICITY and CONVENIENCES, greater power of radiating warm air with the least consumption of fuel to any heretofore manufactured. We are largely interested in the management of the Syracuse Stove Works and recommend the line of "Welcome" stoves and ranges there manufactured. We ask for your patronage with the belief that we can serve your interests.

KERNAN FURNACE CO.

Utica, N. Y., Sept. 1st, 1890.

KERNAN FURNACE.

PORTABLE AND BRICK SET.

DEET ash pit, large doors for loading fuel or removing ashes; patent locking revolving grate; substantial iron pit; solid iron divided into an upper and lower section a large dome with outlets on side of the center; a radiator with an outer enclosure free surrounding its passages in communication with a central fire area heated in passage. No bolts or nuts used. Each part constructed of the steel as used for rivets. The large doors, revolving outwardly affords convenient loading, unloading and usually comes in contact with the spread current of air. The bridge of steel also affords an additional space directly over the heated radiators the gases surround and circulate thereby allowing a perfect combustion before the radiant is reached. The gases from the dome being on one side of the center provide any possibility of the gas gaining an outlet through the feed door and prevents the escape of the gases which are desirous for an opening the higher reaching within a furnace. The radiator receives into its outer enclosing box the thoroughly ignited combustion and through the damper plates each side of the smoke exit if desired, admits of a direct draft, or compress the combustion in reaction for more volume of the radiator, heat through the center box, surrounding its passage, the spread current of air.

In this construction, being constructed of the Kernan Furnace design, is superior over all others. In its durability of construction, superior to all portable furnaces, the grate, solid, no nuts or bolts, enlarged and not constructed from rivets.

First—Space within for the expansion and contracting of gases.

Second—Additional heating surface.

Third—Bringing the heated center directly located at the spread current of air.

Fourth—Openings in dome on one side of center furnace allowing any escape of gas.

Fifth—Heating the upper surface of the dome directly over the center of combustion for the radiation of extra heat.

The radiator receiving heat from the dome and passing the thoroughly ignited particles of combustion, enhances the efficiency of its radiating strategy.

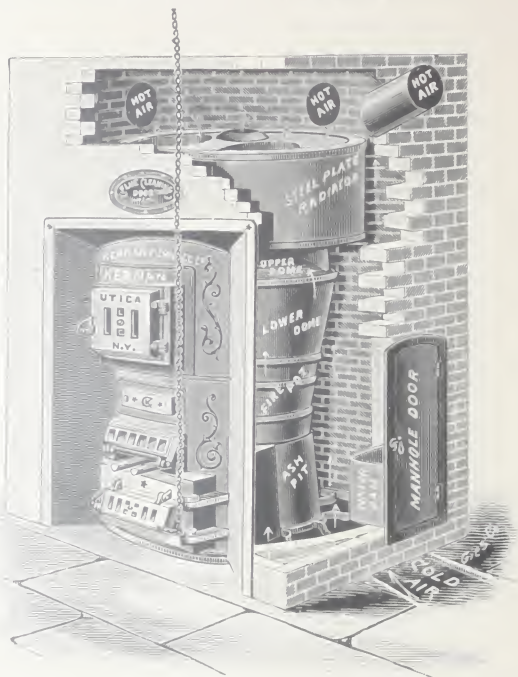
First—In using the combustion when at its highest degree of heat.

Second—In carrying the combustion over the dome through the best of fuel.

Third—Throughout the entire mass traversed surrounding its passage.

Fourth—In affording a central air passage directly over the center of the dome in the center of the radiator. Thus with a minimum amount of fuel the Kernan Furnace radiates the largest possible amount of warm air, because a perfect combustion is consummated immediately over the bed of coals, and the heat thus generated is its passage through the radiator, at all times, available air passage, and its strength is completely exhausted before escaping into the smoke exit.

KERNAN.



Brick Set with Steel Plate Radiator.

FOR HARD OR SOFT COAL.

Including Man Hole Door, Water Pan and Patent Draft Regulator.

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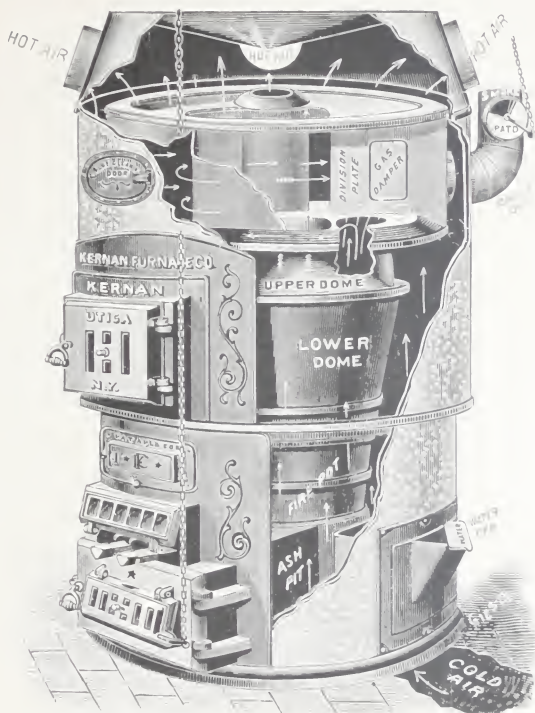
No. 35	\$152.00	No. 46	\$218.00
" 42	190.00	" 52	285.00

Discount per cent.

Covering Bar, per set, extra, net	\$3.00
Sheet Iron Convex Top, extra, net	3.00

For dimensions see page 23.

KERNAN.



Portable with Steel Plate Radiator.

FOR HARD OR SOFT COAL.

• • •

No. 38, less casings	\$140.00	Casings, extra, net	\$10.00
" 42, " "	175.00	" " "	12.00
" 46, " "	200.00	" " "	14.00
" 52, " "	260.00	" " "	18.00

Discount per cent.

For dimensions see page 23

Setting and Location of Furnaces.

VENTILATION

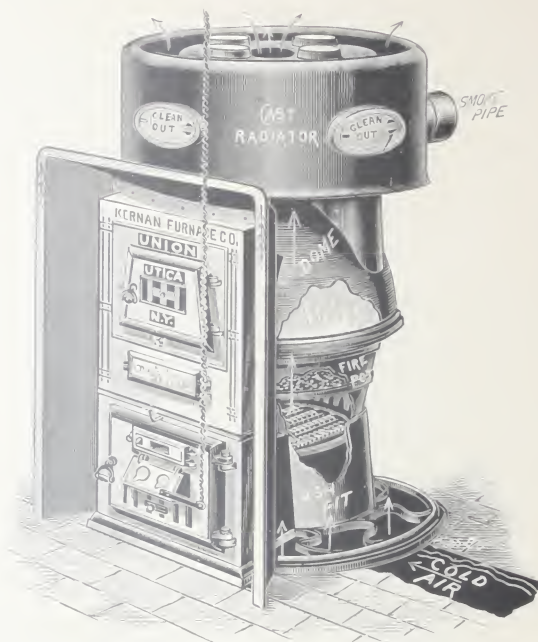
SETTING furnaces, in nearly every instance, the conditions are different, so we can only lay down general rules by following which the best results can be obtained. Secure as far as possible a central location so that the hot air pipes may be of equal length. Give hot air pipes all possible elevation. The longer pipes should have greater capacity. Pipes carried above first floor should have less capacity than those used in rooms of the same size below. Registers should be of larger capacity than the pipes leading to them. The hot air chamber above radiator should never be less than 12 in. in height and higher if possible. The cold air box should have a capacity of $\frac{2}{3}$ of all the hot air pipes and should be taken from the west or north side of the building. In all buildings heated by furnaces there should be some ventilation. This can be secured by using open fire places or by having a warm ventilating shaft connected with rooms to be heated. In churches, halls, etc., where furnace is only used on certain days, an inside cold air duct should be used in connection with outside one, so that when fire is started, the outside one can be shut off and by using the inside one a circulation created and the building quickly and easily heated.

UNION FURNACE.

PORTABLE AND BRICK SET.

A HEAVY, durable furnace. No bolts used in its construction: ash pit, fire pot, dome and radiator connected by sand cup joints; a deep and large ash pit and large feed door. Our patent hexagonal anti-clinker, revolving bar, dumping grate, (see page 24) Dust flue and sectional fire pot. An enlarged dome with four radiator connections, giving enormous and powerful radiating surface. The combustion ascending into the radiator passes to and through the entire radiator flue before reaching the smoke exit. A continuous current of air supply passes over the heated surface of the enlarged dome and through the air spaces surrounded by the radiator flues. We call special attention to the air chamber through center of radiator. This opening directly over center of dome and surrounded by the radiator flues discharges a rapid current of warm air and adds enormously to the heating power of the furnace. Our patent draft regulator is included with every furnace. If desired we can send lift damper in place of patent draft regulator.

UNION.



Brick Set with Cast Iron Radiator.

FOR HARD OR SOFT COAL.

Including Man Hole Door, Water Pan and Patent Draft Regulator.

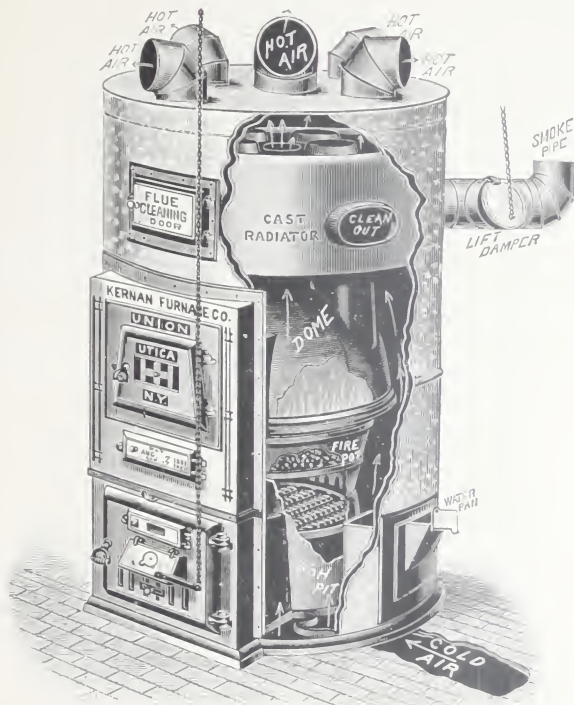
No. 36	\$156 00	No. 45	\$225.00
" 42	190 00	" 51	265.00

Discount per cent.

Covering Bars, per set, extra, net	\$3 00
Sheet Iron Convex Top, extra, net	3.00

For dimensions see page 23.

UNION.



Portable with Cast Iron Radiator.

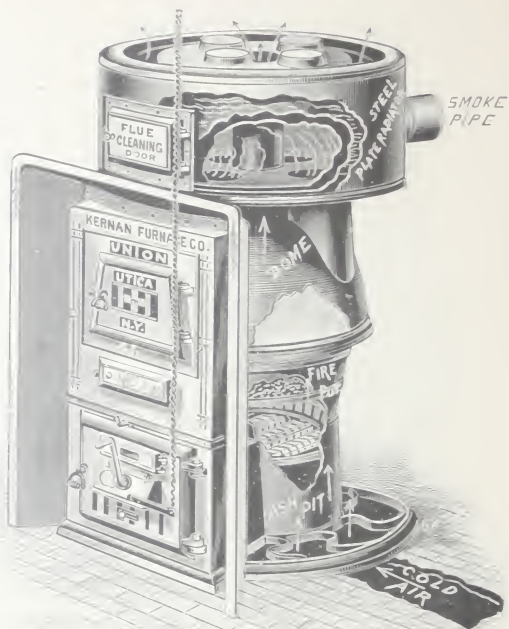
FOR HARD OR SOFT COAL.

o. 36 less casings . . .	\$145.00	Casings, net	\$10.00
' 42 " " . . .	180.00	" "	12.00
' 45 " " . . .	215.00	" "	14.00
' 51 " " . . .	255.00	" "	18.00

Discount per cent.

For dimensions see page 23.

UNION.



Brick Set with Steel Plate Radiator.

(FOR HARD OR SOFT COAL)

Including Man Hole Door, Water Pan and Patent Draft Regulator.

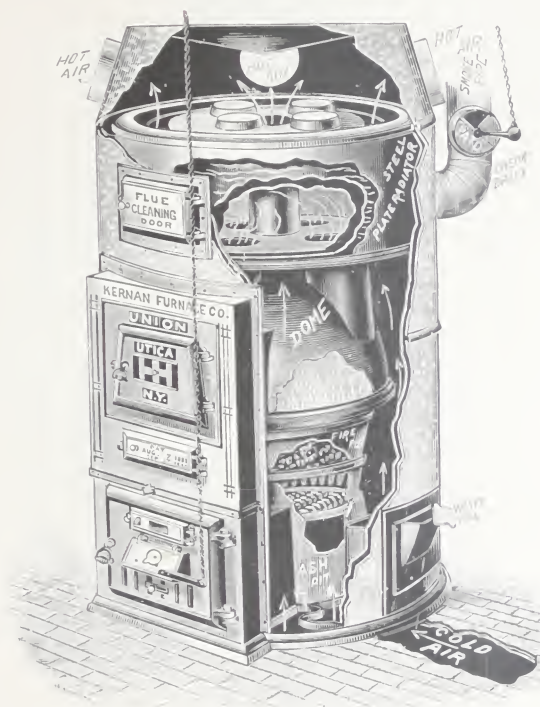
No. 36	.....	\$146 00	No. 45	.....	\$210 00
" 42	.....	177 00	" 51	.....	250 00

Discount per cent.

Covering Bars, per set, extra, net	.....	\$3 00
Sheet Iron Convex Top, extra, net	.....	3 00

For dimensions see page 23

UNION.

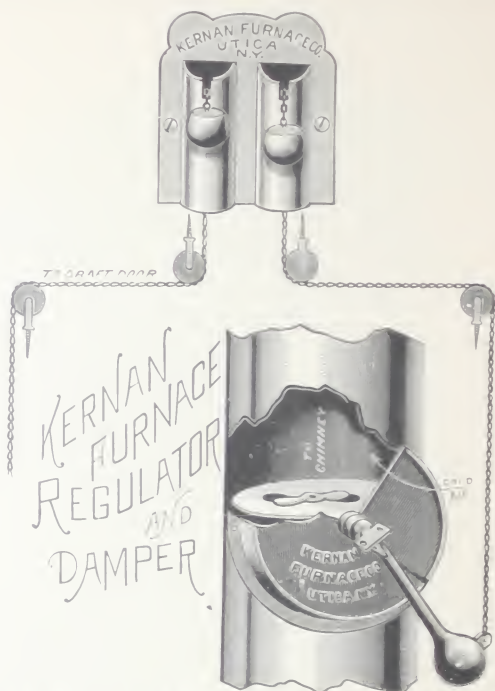


Portable with Steel Plate Radiator.

FOR HARD OR SOFT COAL.

No. 36 less casings . . .	\$134.00	Casings, net	\$10.00
" 42 " " . . .	165.00	" " " "	12.00
" 45 " " . . .	198.00	" " " "	14.00
" 51 " " . . .	238.00	" " " "	18.00

For dimensions see page 23



Patent Draft Regulator.

A SAVING of fuel can be accomplished by the proper construction of a *check draft damper*. The above cut represents one which while easily adjusted, can be operated by chains from above or removing the *ball attachment* operated in the cellar. The construction of the damper is such that not only is the draft checked but the capacity of the pipe, owing to the damper within, reduced thus retarding the combustion, admitting of sufficient space for exit of gases; therefore our patent check draft damper not only controls the *draft*, but economizes the consumption of fuel.

VICTORY.

PORTABLE AND BRICK SET.

NO BOLTS used in its connecting parts. Ash pit, fire pot, dome and radiator connected by sand cup joints. Ash pit deep, ash pit door large, clinkers and ashes easily removed. Our patent hexagonal, anti-clinker, revolving bar, dumping grate (see page 24), dust flue; sectional fire-pot and dome, insuring strength and durability. Radiator receiving all the particles of combustion causing same to traverse its entire circuit before reaching smoke exit. The dome increases in diameter from bottom of lower section to its central point; thence contracting toward radiator connection, giving an enlarged chamber immediately over fire pot surface. Outer circle of radiator extends beyond extreme diameter of dome, thus compelling the air entering through base rings to impinge lower dome and naturally pass over upper dome into and through the air space surrounded by the radiator flue. Our patent draft regulator is included with every furnace. If desired we can send lift damper instead of patent draft regulator.

VICTORY.



Brick Set with Cast Iron Radiator.

No. 128	85.00	No. 142	190.00
" 132	120.00	" 145	225.00
" 136	156.00		

Brick Set with Steel Plate Radiator.

No. 128	80.00	No. 142	177.00
" 132	110.00	" 145	210.00
" 136	146.00		

Discount per cent.

Covering Bars, per set, extra, net	\$3.00
Sheet Iron Convex Top, extra, net	3.00

For dimensions see page 23.

VICTORY.



Portable with Steel Plate Radiator

No. 128 less casings	\$ 75.00	No. 142 less casings	\$165.00
" 132 " "	100.00	" 145 " "	195.00
" 136 " "	135.00		

Portable with Cast Iron Radiator.

No. 128 less casings	\$ 80.00	No. 142 less casings	\$180.00
" 132 " "	110.00	" 145 " "	215.00
" 136 " "	145.00		

Discount

per cent.

No. 128 casings, net	\$ 0.00	No. 142 casings, net	\$12.00
" 132 " "	8.00	" 145 " "	14.00
" 136 " "	10.00		

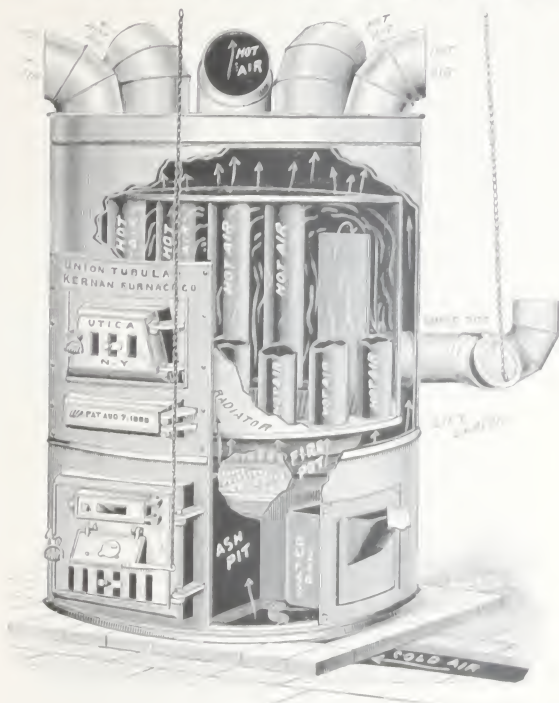
For dimensions see page 23

UNION TUBULAR.

PORTABLE AND BRICK SET.

THE Union Tubular has the same deep ash pit, large ash pit door, patent hexagonal, anti-clinker, revolving bar, dumping grate, dust flue, and sectional fire pot as the Union Furnace. A heavy steel plate tubular radiator or drum with a reversible flue rests upon the fire pot and projects out beyond its edge. The outer shell of this drum is *steel plate* while within at each side and around toward the back is a row of *wrought iron seamless boiler* tubes. Directly at the back is a diving flue connected to the smoke exit. By means of this diving flue the combustion, not as in the ordinary furnaces of this style, going directly to the smoke pipe between the tubes, *is compelled* after encircling the tubes to rise to the top of the tubular radiator before entering diving flue. A continuous supply of air passes upward, surrounding the steel radiator and through the boiler iron tubes, being in turn *surrounded by a highly heated radiating* surface, on its passage to the warm air pipes.

UNION TUBULAR.



Portable with Seamless Wrought Iron Tubes.

No. 36 less casing	\$134.00	Casing, net	\$10.00
" 42 " "	165.00	" " "	12.00
" 45 " "	168.00	" " "	14.00

Brick Set with Seamless Wrought Iron Tubes.

No. 36 including man hole door and water pan	\$140.00
" 42 " "	172.00
" 45 " "	210.00

Diagram per cent.

Covering Bars, per set, extra, net	\$3.00
Sheet Iron Convex Tops extra, net	3.00

For dimensions see page 43.

UNION STEEL BODY



Portable

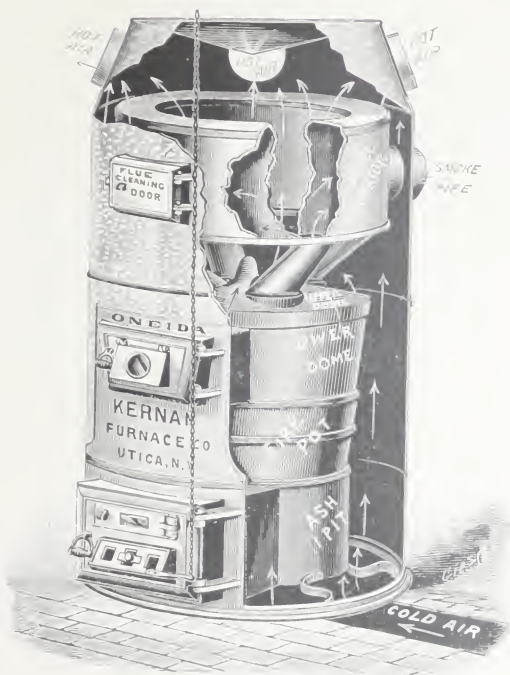
Brick Set

film cost

2,100
3,000

A SCORPIONID, very small, transparent fish, yellow-brown, brownish. Large adults and very young transparent, showing some dusky spots. Dark line, occasional fore and steel plates below. One paired fin; population is associated with rocky formations. If disturbed we rise and are almost brought to pieces. (Early specimens.)

ONEIDA.



Portable.

No. 36 less casings .	\$112.00	Casings, net	\$10.00
" 40 " " .	124.00	" " " "	12.00

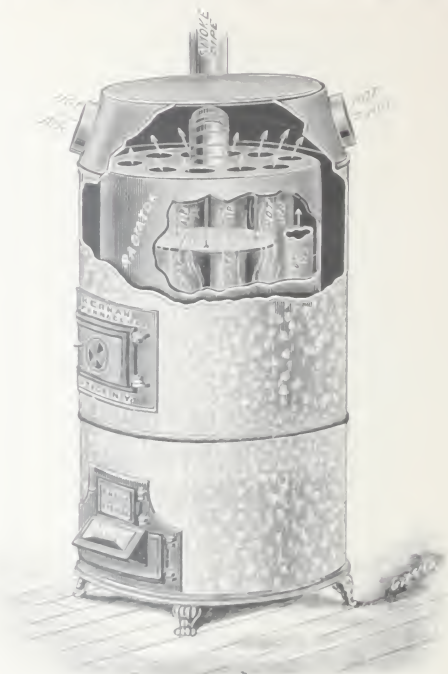
Discount per cent.

A MEDIUM price furnace with cast iron body and steel plate radiator; deep ash pit, draw center grate with rake off through ash pit door, dust flue, sectional fire pot and sand-up joints; large radiating surface. A powerful and economical heater.

Our patent draft regulator is included with every furnace. If desired, we can send lift damper instead of patent draft regulator.

For dimensions see page 23.

ONEIDA TUBULAR.



Portable.

No. 30 less casings \$70.00 Casings, net \$6.00

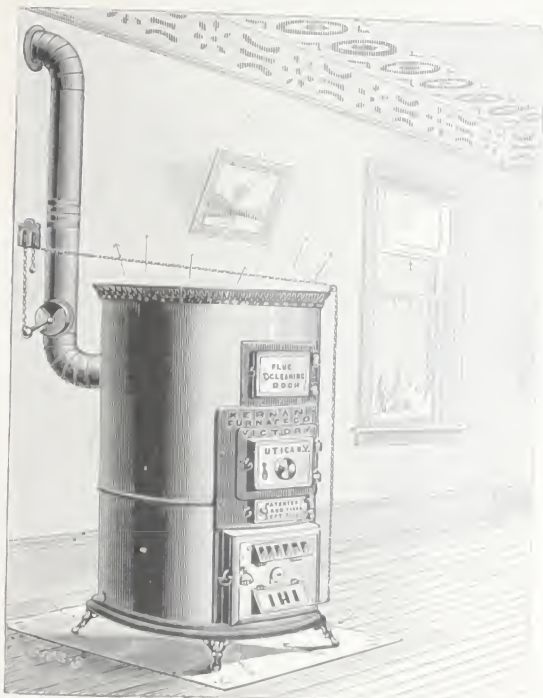
THE Oneida Tubular meets a want often felt by dealers and consumers of warm air furnaces. A small heater suitable in size to warm one or two rooms. While limited in capacity, the Oneida Tubular is durable in construction and has the many conveniences of our other furnaces.

For the purpose of heating a store, a large room, bar-room, or the first floor of a small house, it cannot be excelled, and we can warrant perfect satisfaction.

For dimensions see page 23

VICTORY.

SCHOOL, STORE OR OFFICE HEATER



FIVE SIZES.

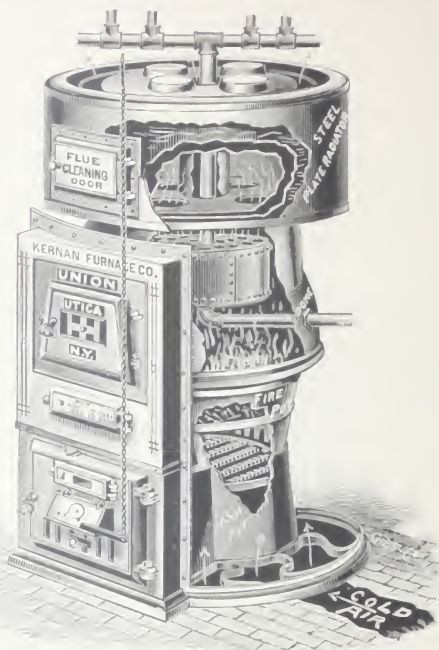
NET PRICES

128, Victory complete with Russia Iron Castings	\$34.00
132, " " " " " "	44.00
136, " " " " " "	50.00
142, " " " " " "	70.00
145, " " " " " "	\$200.00

WING to lack of height in ceiling construction of buildings, it was often found that it was set to advantage. In such cases we recommend our Victory Heater, which is constructed with Russia Iron and finished with an ornamental top ring. The expense of this heater differs little from the cost of a surface, or box burner stove, and it of course gives off a direct heat. A stove is a *direct agent* of heat, warming the air that comes in contact with its surface; thus at times portions of a room are either uncomfortably warm or cold. The Victory is an *indirect agent* of heat, and through convection or radiation, an entering at the top of the room, passing over the heated surface and escaping at the top, a constant current of warm air is discharged into the room air, unlike the effect of *direct radiation* of the box burner stove.

For dimensions see page 23.

Union Combination Heater.



WARM AIR AND HOT WATER.

PORTABLE.

No. 36 less stamps	\$195.00	Casings, extra, net	\$10.00
" 42 " " "	240.00	" " " " "	12.00
" 45 " " "	280.00	" " " " "	14.00
" 51 " " "	350.00	" " " " "	18.00

BRICK SET.

Including Man Hole Door, Water Pan and Patent Draft Regulator.

No. 36	\$200.00	No. 45	\$295.00
" 42	250.00	" 51	360.00

Discount per cent.

UNION combination, warm air and hot water heater, is constructed from all cast-iron, or, if preferred with steel plate radiator. A steel plate tubular boiler is suspended within the dome of the furnace immediately over and above the fire, so that the combustion after impinging the inner walls of dome on its passage to the radiator, passes through and encloses the boiler. Thus, hot water radiation is accomplished without detracting from the volume of warm air radiated. The size of boiler can be adapted to the work required. As the cut shows, the water enters at the base of the boiler and is discharged or flows from the top. The expansion tank, when filled, the system is self-working, requiring no care or attention, and, unlike steam, void of any obnoxious results. In shipping, the boiler is mounted within the dome, securely fastened, ready to receive its outer connections.

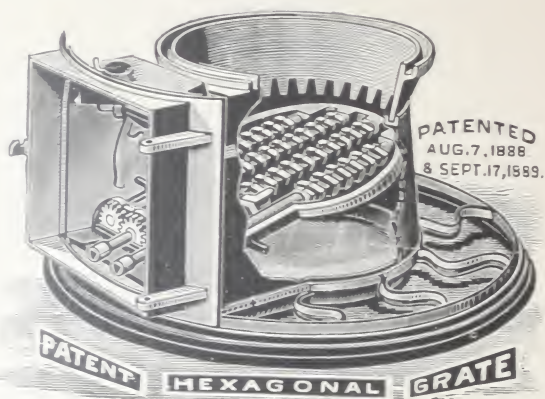
DIMENSIONS AND WIDTHS TO CUT CASINGS.

No.	Diameter of Grate.	Diameter of Fire Pot	Depth of Fire Pot.	Diameter of Casings.	Height of Casings.		Heating Capacity	Width to cut, Galv. Iron for Casings.	
					4 ft.	6 inch.		5 ft.	4 inch.	Bottom.	Top.
38	16 inch	19 inch.	12 inch.	38 inch.	4 ft.	6 inch.	12,000 to 15,000 cu. ft.	21 inches.	34 inches.
42	18 "	21 "	12 "	42 "	4 "	10 "	15,000 to 20,000 "	22 "	30 "
46	21 "	24 "	12 "	46 "	5 "	11 "	20,000 to 30,000 "	23 "	30 "
47	21 "	24 "	12 "	46 "	5 "	11 "	20,000 to 30,000 "	24 "	30 "
52	23 "	26 "	14 "	50 "	5 "	12 "	30,000 to 40,000 "	24 "	30 "
30	17 "	21 "	14 "	39 "	4 "	8 "	12,000 to 15,000 "	24 "	30 "
36	17 "	21 "	14 "	39 "	4 "	8 "	15,000 to 20,000 "	24 "	30 "
42	18 "	23 1/2 "	14 "	40 "	5 "	9 "	20,000 to 30,000 "	30 "	30 "
45	20 "	27 "	17 "	45 "	5 "	10 "	10,000 to 40,000 "	30 "	30 "
51	22 "	30 "	16 "	51 "	5 "	10 "	6,000 to 70,000 "	19 "	26 "
138	13 "	18 "	12 "	38 "	4 "	10 "	9,000 to 12,000 "	20 "	26 "
139	13 "	18 "	12 "	38 "	4 "	10 "	12,000 to 15,000 "	24 "	24 "
136	17 "	24 "	13 "	40 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
142	17 "	24 "	13 "	40 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
145	18 "	24 "	13 "	40 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
30	17 "	24 "	13 "	40 "	4 "	10 "	12,000 to 18,000 "	24 "	24 "
42	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
45	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
46	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
47	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
48	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
49	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
50	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
51	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
52	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
53	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
54	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
55	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
56	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
57	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
58	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
59	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
60	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
61	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
62	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
63	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
64	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
65	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
66	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
67	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
68	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
69	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
70	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
71	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
72	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
73	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
74	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
75	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
76	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
77	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
78	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
79	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
80	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
81	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
82	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
83	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
84	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
85	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
86	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
87	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
88	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
89	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
90	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
91	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
92	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
93	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
94	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
95	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
96	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
97	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
98	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
99	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "
100	20 "	27 "	17 "	45 "	4 "	10 "	15,000 to 20,000 "	24 "	24 "

These estimates of the heating capacities of the different sizes of Kettan, Union and Victory Furnaces, are low, and where the Furnaces are properly set, can with certainty be depended upon. When the furnaces are set to heat one large room, for instance, a school room, public hall, or a church, and when one register is placed directly over the furnace, and all the radiating capacity of the furnace passes directly into and out of this register, there being little or no friction from the hot air pipes to overcome, twenty-five (25) per cent. can be added to the capacity of the different sizes as given. In such cases we recommend the following sizes of hot air pipes and registers, these registers should, in all cases, be used without valves:

No. 128 Furnace, 14 in. pipe, Round Reg., 16 in. Sq. Reg., 14x22 in.	No. 142 Furnace, 23 in. pipe, Round Reg., 26 in. Sq. Reg., 27x27 in.
" 132 " 16 " " " 10x21 "	" 145 " 26 " " " 30 " 30x30 "
" 136 " 20 " " " 20x24 "	" 147 " 30 " " " 36 " 27x38 "

In all cases where possible, a put should be built under the furnace, of brick and mortar, and a mouth built of the same material extending out on one side; to this mouth connect the air supply, and when the air is taken from outside of building, the capacity of the air box should not be less than two-thirds the capacity of the hot air pipe. When the air is furnished from the inside of the building, use the same size face plate as is used over the hot air pipe.



PATENT HEXAGONAL Shaking and Dumping Grate.

A SELF-CLEANING, anti-clinker, rotating bar, dumping grate. The bars are so constructed that the air passes between and reaches the center of each. The triangular grate bars are, without bolts, suspended within a *removable grate frame* so constructed as to give a center support to each bar, thus affording three supports for every triangular bar. The grate frame or any grate bar can be easily replaced through the ash pit door. Grate simple and durable and at all times effective in removing clinkers, agitating or dumping the fire. The ash pit is constructed with a mica door, through which a poker can be inserted over the grate surface, and the clinkers, if any, easily removed.

WE GIVE THE FOLLOWING TABLE OF ESTIMATED
Capacity of Pipes and Registers.
ROUND PIPES.

Diameter of Pipe	Area in Square Inches	Diameter of Pipe	Area in Square Inches	Diameter of Pipe	Area in Square Inches
7 inch	38	13 inch	113	22 inch	380
8 "	50	14 "	154	24 "	452
9 "	64	16 "	201	26 "	531
10 "	78	18 "	254	28 "	616
12 "	110	20 "	314	30 "	707

REGISTERS.

Size of Opening	Capacity in Square Inches	Size of Opening	Capacity in Square Inches	Size of Opening	Capacity in Square Inches
18 X 10	180	17 X 14	238	22 X 20	440
18 X 12	216	18 X 16	288	24 X 24	576
20 X 12	240	18 X 18	324	26 X 26	676
20 X 14	280	12 X 19	228	28 X 28	784
20 X 16	320	14 X 22	308	27 X 27	729
22 X 16	352	18 X 25	450	27 X 30	810
22 X 18	396	18 X 24	432	30 X 30	900

ROUND REGISTERS.

Size of Opening	Capacity in Square Inches	Size of Opening	Capacity in Square Inches	Size of Opening	Capacity in Square Inches
7 inch	38	11 inch	77	20 inch	396
8 "	50	14 "	154	24 "	576
9 "	64	16 "	201	26 "	676
10 "	78	18 "	254	28 "	784
12 "	110	20 "	314	30 "	900

**Size of Hot Air Pipes and Registers to be used in
 First Floor Rooms.**

Register	Pipe	Room	Ceiling	Register	Pipe	Room	Ceiling
18 X 12	10 in.	15 X 10 10 14 X 14	11 ft.	20 X 14	10 in.	14 X 14 10 18 X 15	10 ft.
20 X 14	12 in.	18 X 16 16 20 X 18	13 ft.	24 X 18	12 in.	18 X 18 10 22 X 22	13 ft.

Second Floor Rooms.

Register	Pipe	Room	Ceiling	Register	Pipe	Room	Ceiling
20 X 14	12 in.	18 X 16 16 20 X 18	12 ft.	24 X 18	12 in.	18 X 18 10 22 X 22	12 ft.
22 X 16	12 in.	20 X 18 18 24 X 20	13 ft.	26 X 20	14 in.	22 X 22 10 26 X 26	13 ft.

Vertical Wheel Registers and Ventilators.

JAPANNED—BLACK OR WHITE.

Size of Opening.	Register.	Without Valves.	Register Face.	Ventilator for Corbels.	Flange for Ranges.	With Frame.
4 1/2 X 6 1/2	1.40	0.90	0.40	1.50		0.40
4 X 8	1.50	1.00	0.48	1.60		0.48
4 X 10	1.75	1.15	0.56	1.75		
4 X 12	2.00	1.40	0.64	1.90		
4 X 15	2.30	1.60	0.72	2.10		
4 X 18	2.50	1.75	0.80	2.30		
6 X 6	1.60	1.05	0.50	1.70		
6 X 8	1.80	1.20	0.56	1.90		
6 X 10	2.00	1.30	0.64	2.10	1.00	0.50
6 X 12	2.25	1.45	0.72	2.30	1.20	0.60
6 X 14	2.50	1.65	0.80	2.50	1.40	0.70
6 X 16	2.75	1.80	0.88	2.70	1.60	0.80
6 X 18	3.00	2.00	1.00	2.90	1.80	0.90
6 X 24	3.40	2.40	1.15	3.30	2.20	1.00
7 X 7	0.30	0.45	0.25	0.30	0.30	0.30
7 X 10	2.10	0.45	0.70	2.20	0.40	0.40
7 X 12	2.30	0.60	0.75	2.40	0.50	0.50
8 X 8	2.25	1.40	0.50	2.30	0.40	0.40
8 X 10	2.50	1.75	0.65	2.60	0.50	0.50
8 X 12	2.80	1.90	0.80	2.90	0.60	0.60
8 X 15	3.00	2.05	1.00	3.10	0.70	0.70
8 X 18	3.50	2.35	1.15	3.60	0.80	0.80
9 X 9	2.60	1.70	0.75	2.70	0.60	0.60
9 X 12	3.30	2.10	0.90	3.40	0.70	0.70
9 X 13	3.45	2.45	1.10	3.50	0.80	0.80
10 X 14	3.60	2.55	1.20	3.70	0.90	0.90
10 X 16	3.80	2.70	1.30	3.90	1.00	1.00
10 X 18	4.00	2.80	1.40	4.10	1.10	1.10
10 X 20	4.20	3.00	1.50	4.30	1.20	1.20
10 X 24	4.50	3.30	1.65	4.60	1.40	1.40
12 X 12	5.00	3.50	1.75	5.10	1.50	1.50
12 X 15	5.50	3.75	1.90	5.60	1.60	1.60
12 X 18	6.00	4.00	2.00	6.10	1.70	1.70
12 X 20	6.50	4.25	2.10	6.60	1.80	1.80
12 X 24	7.00	4.50	2.25	7.10	2.00	2.00
14 X 14	7.50	4.75	2.40	7.60	2.10	2.10
14 X 16	8.00	5.00	2.50	8.10	2.20	2.20
14 X 18	8.50	5.25	2.60	8.60	2.30	2.30
14 X 20	9.00	5.50	2.70	9.10	2.40	2.40
14 X 24	9.50	5.75	2.85	9.60	2.60	2.60
16 X 16	10.00	6.00	3.00	10.10	2.70	2.70
16 X 18	10.50	6.25	3.10	10.60	2.80	2.80
16 X 20	11.00	6.50	3.20	11.10	2.90	2.90
16 X 24	11.50	6.75	3.35	11.60	3.10	3.10
18 X 18	12.00	7.00	3.50	12.10	3.20	3.20
18 X 20	12.50	7.25	3.60	12.60	3.30	3.30
18 X 24	13.00	7.50	3.75	13.10	3.40	3.40
20 X 20	13.50	7.75	3.90	13.60	3.50	3.50
20 X 24	14.00	8.00	4.00	14.10	3.60	3.60
20 X 28	14.50	8.25	4.15	14.60	3.70	3.70
24 X 24	15.00	8.50	4.30	15.10	3.80	3.80
24 X 28	15.50	8.75	4.45	15.60	3.90	3.90
24 X 32	16.00	9.00	4.60	16.10	4.00	4.00
28 X 28	16.50	9.25	4.75	16.60	4.10	4.10
28 X 32	17.00	9.50	4.90	17.10	4.20	4.20
32 X 32	17.50	9.75	5.05	17.60	4.30	4.30
32 X 36	18.00	10.00	5.20	18.10	4.40	4.40
36 X 36	18.50	10.25	5.35	18.60	4.50	4.50
36 X 40	19.00	10.50	5.50	19.10	4.60	4.60
40 X 40	19.50	10.75	5.65	19.60	4.70	4.70
40 X 44	20.00	11.00	5.80	20.10	4.80	4.80
44 X 44	20.50	11.25	5.95	20.60	4.90	4.90
44 X 48	21.00	11.50	6.10	21.10	5.00	5.00
48 X 48	21.50	11.75	6.25	21.60	5.10	5.10
48 X 52	22.00	12.00	6.40	22.10	5.20	5.20
52 X 52	22.50	12.25	6.55	22.60	5.30	5.30
52 X 56	23.00	12.50	6.70	23.10	5.40	5.40
56 X 56	23.50	12.75	6.85	23.60	5.50	5.50
56 X 60	24.00	13.00	7.00	24.10	5.60	5.60
60 X 60	24.50	13.25	7.15	24.60	5.70	5.70
60 X 64	25.00	13.50	7.30	25.10	5.80	5.80
64 X 64	25.50	13.75	7.45	25.60	5.90	5.90
64 X 68	26.00	14.00	7.60	26.10	6.00	6.00
68 X 68	26.50	14.25	7.75	26.60	6.10	6.10
68 X 72	27.00	14.50	7.90	27.10	6.20	6.20
72 X 72	27.50	14.75	8.05	27.60	6.30	6.30
72 X 76	28.00	15.00	8.20	28.10	6.40	6.40
76 X 76	28.50	15.25	8.35	28.60	6.50	6.50
76 X 80	29.00	15.50	8.50	29.10	6.60	6.60
80 X 80	29.50	15.75	8.65	29.60	6.70	6.70
80 X 84	30.00	16.00	8.80	30.10	6.80	6.80
84 X 84	30.50	16.25	8.95	30.60	6.90	6.90
84 X 88	31.00	16.50	9.10	31.10	7.00	7.00
88 X 88	31.50	16.75	9.25	31.60	7.10	7.10
88 X 92	32.00	17.00	9.40	32.10	7.20	7.20
92 X 92	32.50	17.25	9.55	32.60	7.30	7.30
92 X 96	33.00	17.50	9.70	33.10	7.40	7.40
96 X 96	33.50	17.75	9.85	33.60	7.50	7.50
96 X 100	34.00	18.00	10.00	34.10	7.60	7.60
100 X 100	34.50	18.25	10.15	34.60	7.70	7.70
100 X 104	35.00	18.50	10.30	35.10	7.80	7.80
104 X 104	35.50	18.75	10.45	35.60	7.90	7.90
104 X 108	36.00	19.00	10.60	36.10	8.00	8.00
108 X 108	36.50	19.25	10.75	36.60	8.10	8.10
108 X 112	37.00	19.50	10.90	37.10	8.20	8.20
112 X 112	37.50	19.75	11.05	37.60	8.30	8.30
112 X 116	38.00	20.00	11.20	38.10	8.40	8.40
116 X 116	38.50	20.25	11.35	38.60	8.50	8.50
116 X 120	39.00	20.50	11.50	39.10	8.60	8.60
120 X 120	39.50	20.75	11.65	39.60	8.70	8.70
120 X 124	40.00	21.00	11.80	40.10	8.80	8.80
124 X 124	40.50	21.25	11.95	40.60	8.90	8.90
124 X 128	41.00	21.50	12.10	41.10	9.00	9.00
128 X 128	41.50	21.75	12.25	41.60	9.10	9.10
128 X 132	42.00	22.00	12.40	42.10	9.20	9.20
132 X 132	42.50	22.25	12.55	42.60	9.30	9.30
132 X 136	43.00	22.50	12.70	43.10	9.40	9.40
136 X 136	43.50	22.75	12.85	43.60	9.50	9.50
136 X 140	44.00	23.00	13.00	44.10	9.60	9.60
140 X 140	44.50	23.25	13.15	44.60	9.70	9.70
140 X 144	45.00	23.50	13.30	45.10	9.80	9.80
144 X 144	45.50	23.75	13.45	45.60	9.90	9.90
144 X 148	46.00	24.00	13.60	46.10	10.00	10.00
148 X 148	46.50	24.25	13.75	46.60	10.10	10.10
148 X 152	47.00	24.50	13.90	47.10	10.20	10.20
152 X 152	47.50	24.75	14.05	47.60	10.30	10.30
152 X 156	48.00	25.00	14.20	48.10	10.40	10.40
156 X 156	48.50	25.25	14.35	48.60	10.50	10.50
156 X 160	49.00	25.50	14.50	49.10	10.60	10.60
160 X 160	49.50	25.75	14.65	49.60	10.70	10.70
160 X 164	50.00	26.00	14.80	50.10	10.80	10.80
164 X 164	50.50	26.25	14.95	50.60	10.90	10.90
164 X 168	51.00	26.50	15.10	51.10	11.00	11.00
168 X 168	51.50	26.75	15.25	51.60	11.10	11.10
168 X 172	52.00	27.00	15.40	52.10	11.20	11.20
172 X 172	52.50	27.25	15.55	52.60	11.30	11.30
172 X 176	53.00	27.50	15.70	53.10	11.40	11.40
176 X 176	53.50	27.75	15.85	53.60	11.50	11.50
176 X 180	54.00	28.00	16.00	54.10	11.60	11.60
180 X 180	54.50	28.25	16.15	54.60	11.70	11.70
180 X 184	55.00	28.50	16.30	55.10	11.80	11.80
184 X 184	55.50	28.75	16.45	55.60	11.90	11.90
184 X 188	56.00	29.00	16.60	56.10	12.00	12.00
188 X 188	56.50	29.25	16.75	56.60	12.10	12.10
188 X 192	57.00	29.50	16.90	57.10	12.20	12.20
192 X 192	57.50	29.75	17.05	57.60	12.30	12.30
192 X 196	58.00	30.00	17.20	58.10	12.40	12.40
196 X 196	58.50	30.25	17.35	58.60	12.50	12.50
196 X 200	59.00	30.50	17.50	59.10	12.60	12.60
200 X 200	59.50	30.75	17.65	59.60	12.70	12.70
200 X 204	60.00	31.00	17.80	60.10	12.80	12.80
204 X 204	60.50	31.25	17.95	60.60	12.90	12.90
204 X 208	61.00	31.50	18.10	61.10	13.00	13.00
208 X 208	61.50	31.75	18.25	61.60	13.10	13.10
208 X 212	62.00	32.00	18.40	62.10	13.20	13.20
212 X 212	62.50	32.25	18.55	62.60	13.30	13.30
212 X 216	63.00	32.50	18.70	63.10	13.40	13.40
216 X 216	63.50	32.75	18.85	63.60	13.50	13.50
216 X 220	64.00	33.00	19.00	64.10	13.60	13.60
220 X 220	64.50	33.25	19.15	64.60	13.70	13.70
220 X 224	65.00	33.50	19.30	65.10	13.80	13.80
224 X 224	65.50	33.75	19.45	65.60	13.90	13.90
224 X 228	66.00	34.00	19.60	66.10	14.00	14.00
228 X 228	66.50	34.25	19.75	66.60	14.10	14.10
228 X 232	67.00	34.50	19.90	67.10	14.20	14.20
232 X 232	67.50	34.75	20.05	67.60	14.30	14.30
232 X 236	68.00	35.00	20.20	68.10	14.40	14.40
236 X 236	68.50	35.25	20.35	68.60	14.50	14.50
236 X 240	69.00	35.50	20.50	69.10	14.60	14.60
240 X 240	69.50	35.75	20.65	69.60	14.70	14.70
240 X 244	70.00	36.00	20.80	70.10	14.80	14.80
244 X 244	70.50	36.25	20.95	70.60	14.90	14.90
244 X 248	71.00	36.50	21.10	71.10	15.00	15.00
248 X 248	71.50	36.75	21.25	71.60	15.10	15.10
248 X 252	72.00	37.00	21.40	72.10	15.20	15

VERTICAL WHEEL REGISTERS.

BRONZED: To Imitate Gold, Silver, Copper, or Bronze Metal.			Plated: Nickel, Electro-Brass, Bronze or Copper.	
Size of Opening.	Register.	Floor Border.	Register.	Floor Border.
4 1/2 x 6 3/4	1.00	.....	2.95	.....
4 x 6	2.00	.....	3.25	.....
4 x 10	2.18	.....	3.50	.....
4 x 12	2.35	.....	4.00	.....
4 x 15	2.45	.....	4.25	.....
4 x 18	3.10	.....	4.80	.....
6 x 6	2.30	.....	3.75	.....
6 x 8	2.50	1.35	3.75	2.80
6 x 9	2.55	1.40	3.95	2.90
6 x 10	2.65	1.50	4.10	3.00
6 x 14	3.25	1.80	5.00	3.40
6 x 15	3.00	1.90	5.40	3.60
6 x 18	4.10	2.10	5.85	3.80
6 x 24	7.40	3.00	10.00	5.50
7 x 7	2.65	1.35	4.05	2.80
7 x 10	2.90	1.50	4.50	3.40
8 x 8	2.80	1.55	4.50	3.30
8 x 10	3.10	1.65	4.85	3.50
8 x 12	3.45	1.80	5.20	3.60
8 x 15	4.35	2.15	6.15	4.50
8 x 18	5.00	2.40	6.95	5.00
8 x 24	3.25	1.65	5.00	3.50
9 x 12	4.00	1.95	5.70	3.70
10 x 12	4.00	2.00	5.95	3.90
10 x 14	4.35	2.05	6.20	4.10
10 x 15	5.00	2.10	5.65	3.70
10 x 18	4.35	2.15	6.15	4.05
10 x 24	3.15	2.30	6.85	4.40
10 x 30	5.65	2.50	7.45	4.75
12 x 12	7.00	2.75	8.65	5.05
12 x 20	7.70	2.90	9.45	5.40
12 x 24	15.00	2.50	7.55	4.50
12 x 30	7.00	2.90	8.65	5.35
12 x 36	7.65	3.00	9.20	5.50
12 x 48	7.80	3.10	9.45	5.65
12 x 60	8.15	3.25	9.95	5.80
12 x 72	8.60	3.40	10.20	6.00
12 x 84	8.60	3.60	10.80	6.20
12 x 96	10.75	4.00	13.05	7.40
14 x 14	8.60	3.15	10.20	6.00
14 x 18	9.35	3.45	11.45	6.50
14 x 24	7.85	3.70	12.50	7.00
14 x 30	10.50	4.00	13.20	7.50
14 x 36	11.25	4.35	13.75	8.00
14 x 48	15.00	5.20	17.45	10.00
16 x 16	10.25	4.25	12.30	7.00
16 x 20	11.40	4.65	14.00	7.95
16 x 24	15.00	5.20	17.75	9.75
16 x 30	15.50	5.65	18.10	10.40
16 x 36	17.00	7.20	22.20	14.75
16 x 48	19.00	5.00	24.90	15.55
16 x 60	22.05	5.25	28.25	16.50
16 x 72	22.55	5.25	28.25	16.50
27 x 27	.....	9.00	31.75	.....
30 x 30	.....	9.50	36.00	.....

CIRCULAR TOP VERTICAL WHEEL REGISTERS. JAPANNED—BLACK OR WHITE.

Size of Opening	Register	Register Face	Ventilator for Cords	Adjustable Summer Proof	Wall Frame
X 10	3 25	3 50	4 35	5 00	
X 12	3 65	4 25	5 15	5 80	
X 14	3 40	4 20	5 55	6 35	
X 12	3 40	4 30	5 55	6 35	7 20
X 14	4 10	4 75	6 25	6 90	7 45
X 16	4 60	4 70	6 75	7 00	8 05
X 18	5 20	5 80	7 35	7 50	8 50
X 20	6 50	6 50	8 55	9 00	9 50
X 22	7 35	7 55			
X 24	8 80	8 75			
X 26	9 50	9 50			

CONVEX REGISTERS AND VENTILATORS. SELF-INDICATING. For Shallow Flues and Thin Partitions.

Size of Opening	Black or White Japanned	Brass or to Imitate Gold, Copper, or Bronze Metal.	Nickel Plated	Face Japanned	Face Brased	Wall Frame
X 10	3 50	4 00	4 75	4 75	5 00	5 00
X 12	4 10	4 25	5 00	5 00	5 25	5 25
X 14	4 50	4 50	5 50	5 50	5 75	5 75
X 16	5 25	5 25	6 25	6 25	6 50	6 50
X 18	6 00	6 00	7 00	7 00	7 25	7 25
X 20	6 75	6 75	7 75	7 75	8 00	8 00
X 22	7 50	7 50	8 50	8 50	9 00	9 00
X 24	8 50	8 50	9 50	9 50	10 00	10 00
X 26	10 00	10 00	11 00	11 00	11 50	11 50

VERTICAL WHEEL REGISTERS AND VENTILATORS. JAPANNED—BLACK OR WHITE.

Size of Opening	Register	Without Valves	Register Face	Ventilator for Cords	Face Japanned	Wall Frame
X 10	\$10.00	\$14.50	\$ 8.00		\$ 8.00	
X 12	10.00	21.00	11.50		11.50	
X 14	10.00		14.50		14.50	

ROUND, FLOOR, OR WALL REGISTERS. Iron Borders and Ventilators with Fixtures for Cords JAPANNED—BLACK OR WHITE.

Size of Opening	Register	Without Valves	Register Face	Ventilator for Cords	Wall Frame
6 inch	1 25	1 25	1 50	1 50	1 50
8 "	1 30	1 30	1 50	1 50	1 50
10 "	1 35	1 35	1 50	1 50	1 50
12 "	1 40	1 40	1 50	1 50	1 50
14 "	1 45	1 45	1 50	1 50	1 50
16 "	1 50	1 50	1 50	1 50	1 50
18 "	1 55	1 55	1 50	1 50	1 50
20 "	2 00	2 00	1 50	1 50	1 50
22 "	2 05	2 05	1 50	1 50	1 50
24 "	2 10	2 10	1 50	1 50	1 50
26 "	2 15	2 15	1 50	1 50	1 50

HEAVY ROUND GRATINGS. WITHOUT VALVES. BLACK JAPANNED.

Size	Grating	Border	Size	Grating	Border
30 inch	11.40	14.85	48 inch	18.40	21.00
36 "	14.05	17.00			

SMOKE PIPE REGISTERS AND BORDERS.

Opening for Pipe	Black Japanned	Iron Border	Coiling Plate
7, 8 and 9 inch	2.50	2.50	2.00

Welcome Stoves and Ranges,

Manufactured by Syracuse Stove Works, Syracuse, N. Y.



WELCOME SQUARE PARLOR.

FOUR Corner Flues; the heat carried to the base of stove, and then equally distributed; perfect system of circulation and ventilation; draw center and shaking grate, large ash pan; handsomely decorated; symmetrically proportioned

Welcome Stoves and Ranges,

Manufactured by Syracuse Stove Works, Syracuse, N. Y.

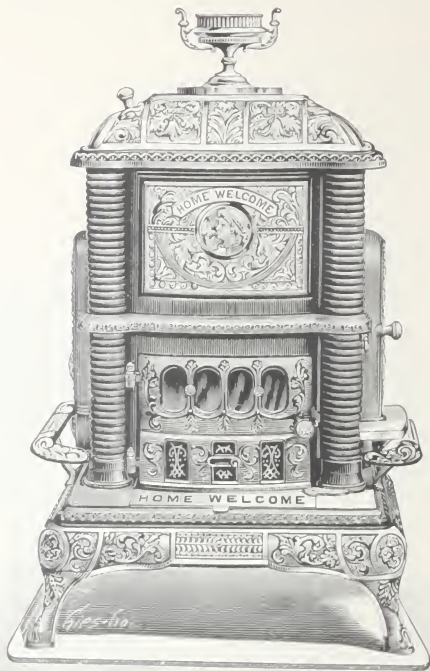


WELCOME 1889 RANGE.

Made in all desirable styles and sizes. For cooking and heating they please the most exacting. For beauty of design and finish they suit the most critical. Examine and purchase a Welcome Range with latest improvements.

Welcome Stoves and Ranges,

Manufactured by Syracuse Stove Works, Syracuse, N. Y.



HOME WELCOME COTTAGE.

Three sizes Straight draft
One size Reversible flue

Nos 22, 24 and 26.
No. 24.

Original in its Construction. Perfect in its Design.

A Perfect System of Circulation and Ventilation.

A durable heater. Heavy wood grate and fire back and deep ash pit.

Numbers indicate length of wood

KERNAN FURNACE COMPANY

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VICTORY

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WARM AIR FURNACES,

AND

Union Construction

WARM AIR AND HOT WATER HEATERS